



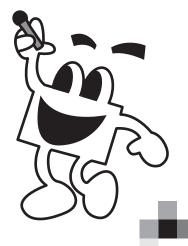
# **Professional Mixing Amplifier**

# **DX-333**

# **Operating Instructions**



Thank you for purchasing this unit.
To make full and effective use of this unit, please read this Owner's
Manual carefully before operating it.
After reading this manual, retain this booklet together with the Warranty
Card for future use in case of maintenance or troubleshooting.





EVOLUTION OF KARAOKE





CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK) NO USER-SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED PERSONNEL

# **SAFETY INSTRUCTIONS**

- 1. Read Instructions: All the safety and operation instructions should be read before this BMB product is operated.
- 2. Retain Instructions: The safety and operating instructions should be kept for future reference.
- 3. Warnings: All warnings on this BMB product in these operating instructions should be followed.
- 4. Follow Instructions: All operating and other instructions should be followed carefully.
- 5. Water and Moisture: This BMB product should not be used near water, for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool, swamp or salivating St. Bernard dog, etc.
- 6. Cleaning: Clean only with a dry cloth.
- 7. Ventilation: This BMB product should be situated so that its location or position does not interfere with its proper ventilation. For example, the Component should not be situated on a bed, sofa, rug, or similar surface that may block any ventilation openings, or placed in a built-in installation such as a bookcase or cabinet that may impede the flow of air through ventilation openings.
- 8. Heat: This BMB product should be stay away from heat sources such as radiators, or other devices producing heat.
- 9. Power Sources: This BMB product should be connected to a power supply only of the type described in these operation instructions or as marked on this BMB product.
- 10. Power Cord Protection: Power supply cords should be routed so that they are not likely to be

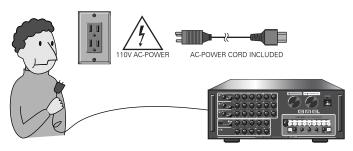
- walked upon or pinched by items placed upon or against them. Please pay particular attention to cords at plugs, convenience receptacles, and the point where they exit this BMB product.
- 11. Object and Liquid Entry: Care should be taken so that objects do not fall on, or liquids are not spilled into this BMB product.
- 12. Damage Requiring Service: This BMB product should be serviced only by qualified service personnel when:
  - A. The power-supply cord or the plug has been damaged; or
  - B. Objects have fallen, or liquid has spilled into this BMB product; or
  - C. This BMB product has been exposed to rain; or
  - D. This BMB product does not appear to operate normally or exhibits a marked change in performance; or
  - E. This BMB product has been dropped, or its chassis damaged.
- 13. Servicing: The user should not attempt to service this BMB product beyond those means described in this operating manual. All other servicing should be referred to the BMB Service Department.
- 14. To prevent electric shock, do not use this polarized plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.
- 15. Grounding or Polarization: Precautions should be taken so that the grounding or polarization means of this BMB product is not defeated.
- 16. Power Precaution: Unplug this BMB product during lightning storms or when unused for long periods of time. Note that this BMB product is not completely disconnected from the AC mains service when the power switch is in the OFF position.
- 17. This apparatus does not exceed the Class A/Class B (whichever is applicable) limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.
- 18. Exposure to extremely high noise levels may cause permanent hearing loss. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will loss some hearing if exposed to sufficiently intense noise for a

period of time. The U.S. Government's Occupational Safety and Health Administration (OSHA) have specified the permissible noise level exposures shown in the following chart.

According to OSHA, any exposure in excess of these permissible limits could result in some hearing loss. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels use hearing protectors while the equipment is in operation. Ear plugs or protectors in the ear canals or over the ears must be worn when operating the equipment in order to prevent a permanent hearing loss if exposure is in excess of the limits set forth here.

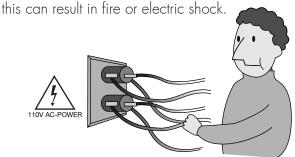
#### **AC-Power Sources**

This set should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of electrical power supplied to your home, consult your dealer or local power company. For those sets designed to operate from battery power, or other sources, refer to the operating instructions.



#### Overloading

Do not overload wall outlets, extension cords or convenience receptacles beyond their capacity, since this can result in fire or electric shock





An appliance and cart combination should be move with care. Quick stops, excessive force and uneven surfaces may cause the appliance and cart combination to overturn.

#### Accessories

Do not place the set on an unstable cart, stand, tripod, bracket, or table. The set may fall, causing serious injury to a child or an adult, and serious damage to the set. Use only a cart stand tripod, bracket, or table recommended by the manufacturer.



For the set with a three-wire grounding type ac plug:

This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to have a suitable outlet installed. Do not defeat the safety purpose of the grounding plug.

Duration Per Day In Hours	Sound Level dBA, Slow Response	Typical Example
8	90	Duo in small club
6	92	
4	95	Subway Train
3	97	
2	100	Very loud classical music
1.5	102	
1	105	Patrice screaming at Ron about deadlines
0.5	110	
0.25 or less	115	Loudest parts at a rock concert

WARNING- To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

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# INTRODUCTION

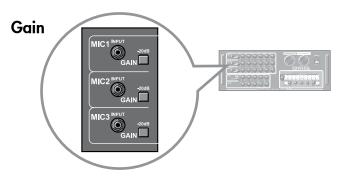
Thank you for choosing the BMB DX-333 Stereo Mixing and Digital Key Control Amplifier (also called BMB DX-333). We appreciate your vote of confidence in this innovative product. BMB DX-333 is indeed a hybrid of power amplifier and mixer that can help you save more space and achieve convenience. It can produce the lowest level of feedback. It is designed to fulfil the amplification needs of almost any type of application. It also boasts some special features you would expect to pay for - like adjustable built-in equalizer at different levels (i.e. Hi-EQ, Mid-EQ, and Low-EQ) enabling the microphone to adjust music key while you are singing Karaoke, subwoofer filtering, speaker-protecting limiter, etc. Perhaps the most important feature of the BMB DX-333 Power Amplifier is the attention to detail in every aspect of designs.

BMB DX-333 is based on real and proven design principles. The result of using proven design principles is a production of a power amplifier that can perform better than conventional designs when presented with adverse conditions. The design can also satisfy multi-uses for home Karaoke, Professional D.J., KTV rooms and equipment rental.

One of the most difficult things for a power amplifier to handle is clipping. Conventional designs use lots of negative feedback to provide stability and lower distortion. When clipping occurs, this "feedback" causes high-frequency sticking, keeping the amplifier "latched" in the clipping state longer than necessary. This results in painfully audible distortion. The design of BMB DX-333 can eliminate this high-frequency sticking and allow the amplifier to remain stable when powering high reactive loads high volume level.

To operate the BMB DX-333 Stereo Mixing and Digital Key Control Amplifier properly, please read this manual carefully and follow the instructions.

# SPECIAL FEATURE DESCRIPTIONS



There are two viewpoints regarding the gain structure of power amplifiers - constant gain and constant sensitivity. Constant gain means that regardless of the output power of the amplifier, the gain from input to output remains the same. (By the way, this refers to the full gain of the amplifier, with the gain or level controls all the way up.) Within a product line of constant gain power amplifiers, as the output power rating of an amplifier increases, the level of the input voltage must also increases. For example, if an amplifier is rated at 100W into an 8-ohm load, and it has 26 dB of gain, it requires an input signal of 1.4V rms to drive it to full power. This is about +5 dBu, a reasonable operating point for professional gear.

Now take an amplifier rated at 200W into an 8-ohm load. If it also has a gain of 26 dB, it requires an input signal of 2.0V rms to drive it into full power, or +8 dBu. This can become problematic as the power of the amplifier increases. What if you have a power amp rated at 800W into 8 ohms? This will require an input signal of 4.0V rms to drive it to full power. This equates to a whopping +14.3 dBu! You've just robbed your mixer of 10 dB of headroom. You'll either have to have a good limiter to keep the transient peaks down, or turn down the level from the mixer and not use all the power available from the amplifier.

Constantly sensitivity means that regardless of the output power of the amplifier (the input voltage required to attain full output power) remains the same. As the output power of an amplifier increases, the gain of the amplifier must also increase. Referring back to the previous example, an amplifier rated at 100W into 8 ohms with a gain of 26 dB requires an input signal of 1.4V rms to drive it to full power. It has an input sensitivity of 1.4V rms. In order for the 200W amplifier to reach full power into 8 ohms with a 1.4V rms input signal, it must have a gain of 29dB. And the 800W amplifier will require a gain of 35 dB to reach full power with a 1.4V input signal.

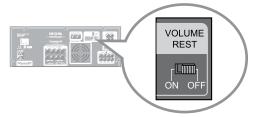
So what are the pros and cons of these two approaches? The reason some amplifier manufacturers use the constant gain approach is because the noise specification looks better It's a fact of physics that as the gain of the amplifier increases, the circuit noise is amplified and increases too. By maintaining a constant gain, the noise spec for an 800W amplifier can look as good as the noise spec for a 100W amplifier. The downside to this is that you have to crank up your mixer level feeding the input of the amplifier, losing headroom and possibly increasing the noise level from the mixer.

Conversely, constant sensitivity demands that as the power increases, so must the gain. Yes, the output noise of the amplifier will increase, but you maintain in the critical headroom available from your mixer. The additional noise is generally not a problem in live sound reinforcement situations. If it is, you can turn down the GAIN control a few clicks to find a happy compromise between noise floor and headroom available. As an added benefit, you can drive multiple amplifiers with the same signal and get the maximum power available from all of them.

The gain structure of the BMB DX-333 Stereo Mixing and Digital Key Control Amplifier is designed so that a 4 dBu (1.23V rms) input signal drives the amplifier to 425 watts into 4 ohms. This is how the sensitivity of an amplifier is defined. In this case, it equates to a voltage gain of about 20 dB.

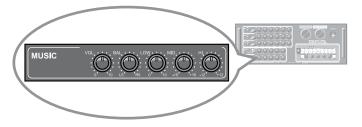
You can set the GAIN controls as low as you like. However, reducing GAIN controls requires an increased input level to reach full power at the amplifier's output. Like all amplifier controls, you'll typically determine the optimal settings during installation or sound check, then leave them alone, using your signal source to control listening level as you work.

# **Automatic Zero Volume Adjustment**



The special function of the automatic volume adjustment automatically sets both of the MIC MASTER VOL and MUSIC MASTER VOL to zero volume level when the power is turned on. This would avoid sudden painfully loud sound to damage hearing power for ear. You can switch it to for manual operation. However, we recommend you to use this function to protect your hearing power.

# Adjustable Built- In Equalizer



The BMB DX-333 Stereo Mixing and Digital Key Control Amplifier has low, mid peaking, and high built-in equalizer.

#### HI-EQ

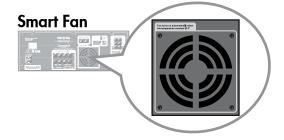
This control provides from -15 dB to + 15 dB of boost of cut, and it is also flat at the detent. Use it to add sizzle to cymbals or an overall sense of transparency or edge to keyboards, vocals, guitar, and bacon frying.

#### MID-EQ

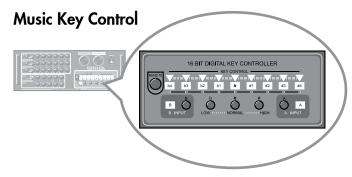
Short for "midrang," it provides from -12 dB to +12 dB of boost or cut, also flat at the center detent. Midrange EQ is often considered the most dynamic because the frequencies that define any particular sound are almost always found in this range.

#### LOW-EQ

This control provides from -15 dB to + 15 dB of boost. The circuit is flat (no boost or cut) at the center detent position. This frequency represents the punch in bass drums, bass guitar, fat synth patches, and high-testosterone male singers.

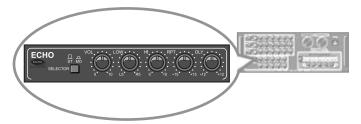


The fan at the back of the BMB DX-333 Stereo Mixing and Digital Key Control Amplifier automatically turns on to cool down the heat when the temperature reaches 60 degree Fahrenheit.



You can adjust the music key for Karaoke singing. Increase the music keys from #1 to #4 and decrease the music keys from b1 to b4.

#### **Echo Effect**



You can increase the echo effect by adjusting the volume with Low (Lo) and High (HI) and mixing with the Time Delay (DLY) and Repeat (RPT).

# **GENERAL CONSIDERATIONS**

#### **AC Power Distribution**

The majority of AC outlets encountered in homes and clubs are served by a 240VAC center-tapped service entrance transformer. This provides two phases of AC power on either side of the center tap at 120V each. In order to minimize ground loops, the safety grounds for all the outlets should be connected to a common ("star") grounding point, and the distance between the outlets and the common grounding point should be as short as possible.

If lighting is used in a show, it is preferable to power the lights from one leg of the service, and power the audio equipment from the other leg. This will help minimize noise from the lights coupling into the audio.

W hen setting up for a show, oftentimes you are plugging into an AC power distribution system you know nothing about. You may even be faced with 2-wire AC outlet tester in your toolbox so you can check the outlets yourself to make sure they are wired correctly. These testers will tell you if the polarity of the hot and neutral wires is reversed and if the safety ground is disconnected. Don't use an outlet if it is wired improperly! This is to protect yourself as well as your equipment.

If you find that you must plug into a two-wire outlet, you will need to use a two-wire to three-wire adapter (cheater plug). These come with a metal tab that you put underneath the center screw that holds the AC outlet faceplate in place. This center screw must be grounded. You can check it by connecting the adapter to the outlet and then plugging in your AC outlet tester.

# **Input Wiring**

Use a high-quality 3-conductor shielded cable to connect the signal between the signal source and the balanced inputs to the amplifier. If you're using the unbalanced inputs, use a high-quality 2-conductor shielded cable.

# **Output Wiring**

Use heavy gauge, stranded wire for connecting speakers to the MA-930 terminals. As the distance between the amplifier and the speakers increase, the thickness of the wire should also increase. Speaker wire has resistance, and when electricity passes through a resistor, power is lost. The thicker the wire, the less resistance it offers, and the more power actually gets to the speakers.

The thickness of wire is rated in gauges. Use the chart below to determine the correct gauge of wire to use according to the distance between the speakers and the amplifier, and the impedance of the load the amplifier is driving. This ensures that the power lost across the speaker wire is less than 0.5dB.

WIRE LENGTH	LOAD IMPEDANCE	GAUGE OF WIRE
Up to 25 ft	2Ω 4Ω 8Ω	14 gauge 16 gauge 18 gauge
Up to 40 ft	2Ω 4Ω 8Ω	12 gauge 14 gauge 18 gauge
Up to 60 ft	2Ω 4Ω 8Ω	10 gauge 12 gauge 16 gauge
Up to 100 ft	2Ω 4Ω 8Ω	8 gauge 10 gauge 14 gauge
Up to 150 ft	2Ω 4Ω 8Ω	6 gauge 8 gauge 12 gauge
Up to 250 ft	2Ω 4Ω 8Ω	4 gauge 6 gauge 10 gauge

# SAFETY PRECAUTIONS

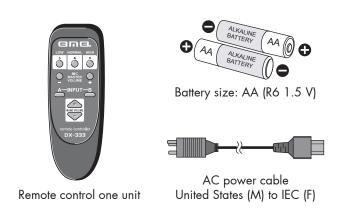
Selecting fine audio equipment such as the unit you've just purchased is only the first step to your musical enjoyment. Now it's time to consider how you can maximize the fun and the safety of your new equipment. We want you to get the most out of your equipment by playing it at a safe level without affecting your hearing. Sound can be very harmful. Over time your hearing "comfort level" adapts to higher volumes of sound. What sounds "normal" can actually be loud and harmful to your hearing. Therefore, please guard against this by setting your equipment at a safe level before your hearing adapts. To establish a safe level, you can start your volume control at a low setting, then slowly increase the sound until you can hear it comfortably and clearly. If used wisely, your new sound equipment will provide you more new experience in music. Since hearing damage from loud noise is often undetectable until it is too late, we recommend you avoid prolonged exposure to excessive noise. The following noises can be dangerous under constant exposure. Therefore, please be cautious with the dB level when playing your new equipment.

Decible Level	Example
120 dB	Rock band concert in front of
	speakers, thunderclap
140 dB	Gunshot blast, jet plane
180 dB	Rocket launching pad

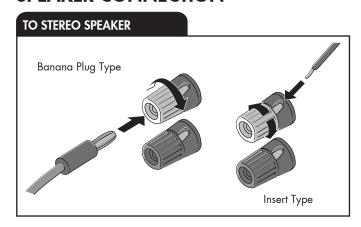
# **SPECIFICATIONS**

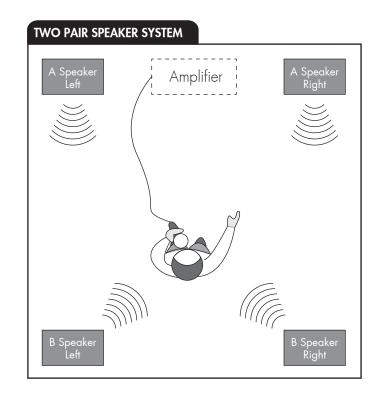
Audio Output	300W+300W	
MIC Input Sensitivity	0<15mV	
External Devices Sensitivity	. 250mV	
Signal/Noise Ratio (with IHF A Filter)80dB		
T.H.D (1kHz.AUX 150mV INPUT)	2%	
Frequency Band	. 25Hz~20kHz	
MIC. Tone Adjustment	80Hz <u>+</u> 15dB	
	3.5kHz <u>+</u> 15dB	
	12kHz <u>+</u> 15dB	
ECHO Tone Adjustment	80Hz <u>+</u> 15dB	
	12kHz <u>+</u> 15dB	
Power Source	. AC110V/60Hz	
Electricity Consumption	550W	
Weight	33LBs	
Dimension (inch)		

# **PACKAGE ACCESSORIES**

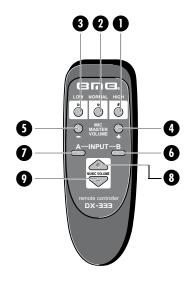


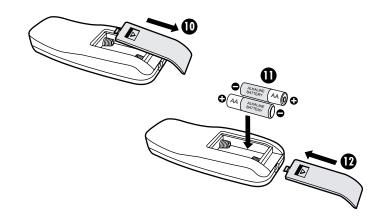
# SPEAKER CONNECTION





# NAMES AND FUNCTIONS OF REMOTE CONTROLLER COMPONENTS





- KEY CONTROL HIGH RESPONSE
- **2** KEY CONTROL NATURAL RESPONSE
- **3** KEY CONTROL LOW RESPONSE
- MICROPHONE MASTER VOLUME CONTROL UP LEVEL (MIC. 1, MIC. 2 AND MIC. 3)
- MICROPHONE MASTER VOLUME CONTROL DOWN LEVEL (MIC. 1, MIC. 2 AND MIC. 3)
- 6 AUDIO INPUT BUTTON
- **AUDIO INPUT ABUTTON**
- MUSIC MASTER VOLUME CONTROL UP LEVEL
- MUSIC MASTER VOLUME CONTROL DOWN LEVEL
- **OPEN BATTERY COVER**

Open the battery compartment cover on the back of the remote control unit. The cover should open easily if you press on in with your thumb while sliding it in the direction of the arrow.

# **1** INSERTING BATTERIES

Insert two size AA (R6) alkaline batteries (supplied) by matching the + and - on the batteries to the diagram inside the battery compartment.

# **©** CLOSE BATTERY COVER

Close the cover of the battery case.

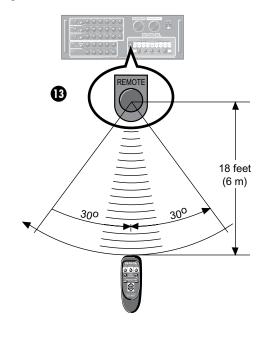
#### NOTE

Remove the batteries to avoid damage from possible battery leakage whenever you anticipate that the remote control will not be used for an extended period.

Handle the remote control with care. Avoid dropping it, getting it wet, or placing it in direct sunlight, near a heater, or where the humidity is high.

#### **13** USING REMOTE CONTROL UNIT

When operating the remote control unit, point the unit's infrared signal transmitter at the remote control remote sensor on the front panel of the amplifier. The remote control unit can be used within a range of about 18 feet (6m) from the remote sensor, and within angles of up to about 30 degrees.



# NAMES AND FUNCTIONS OF FRONT PANEL COMPONENTS

#### POWER SWITCH

Press this switch up to turn the power ON. Press the switch down to turn the power OFF.

#### MUSIC. CONTROL

This control allows you to adjust the volume of the musical source.

## **3** MIC. (MICROPHONE) MASTER VOL. CONTROL

This control MIC.1, MIC.2 and MIC.3 to adjust the master volume.

## 4 MIC. 1 (HI) HIGH CONTROL

Adjusts the microphone 1 high frequency EQ response.

# **5** MIC. 1 (MID) MIDDLE CONTROL

Adjusts the microphone 1 middle frequency EQ response.

#### **6** MIC. 1 LOW CONTROL

Adjusts the microphone 1 low frequency EQ response.

#### MIC. 1 ECHO VOL CONTROL

Adjusts the microphone 1 echo effect EQ response.

#### **MIC. 1 (BAL) BALANCE CONTROL**

Adjusts the microphone 1 signal for left and right speakers.

# MIC. 1 (VOL) VOLUME CONTROL

Adjusts the microphone 1 volume.

# MIC. 1 SIGNAL LIGHT

When it receives an audio signal at or above 0 dB automatically on. Signal will appear on the meters.

#### **1** MIC. 1 GAIN SWITCH

Turn it on to increase the microphone signal level to -20 dB. Turn it down to decrease the microphone signal level to normal.

#### MIC. 1 INPUT 1/4 JACK

This jack is for connecting microphones input 1.

# MIC. 2 INPUT 1/4 JACK

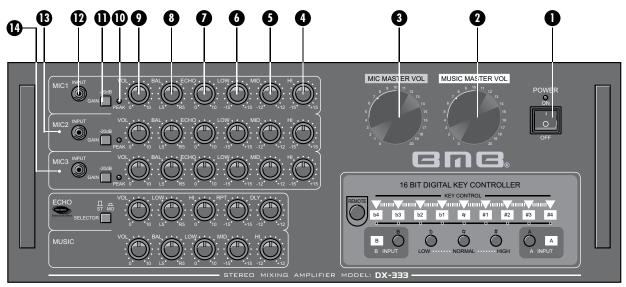
Same features as MIC.1 with same control buttons. Please view details from 4 to 12.



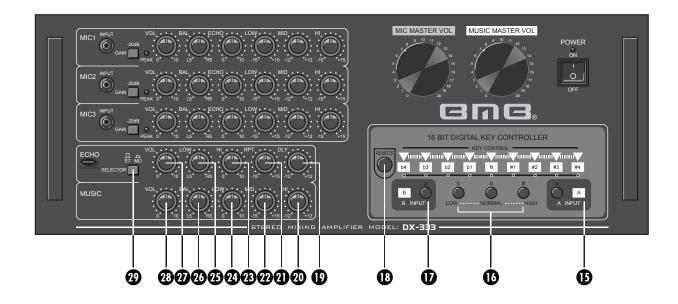
# MIC. 3 INPUT 1/4 JACKS

Same features as MIC. 1 and 2 with same control buttons. Please view details from 4 to 12.





# NAMES AND FUNCTIONS OF FRONT PANEL COMPONENTS



# **I** ■ INPUT SELECTION

This button is input A selector for input audio signal.

## **6** KEY CONTROL

Set the desired key by the 16 bit digital key controller buttons that have nine steps with signal light display on top.

## **INPUT SELECTION**

This button is input B selector for input audio signal.

#### **B** REMOTE SENSOR

The remote control unit can be used within a range of about 18 feet.

## **19** ECHO (DLY) DELAY BUTTON

Adjusts the delay time with this EQ control. Delay time is for microphone vocal.

## **MUSIC (HI) HIGH BUTTON**

Adjusts the music high frequency EQ response.

#### **1** ECHO (RPT) REPEAT BUTTON

Adjusts the interval of repetitions with this EQ control.

#### **MUSIC (MID) MIDDLE BUTTON**

Adjusts the music middle frequency EQ response.

# **13** ECHO (HI) HIGH BUTTON

Adjusts the microphone vocal high frequency EQ response.

## **20** MUSIC LOW BUTTON

Adjusts the music low frequency EQ response.

#### **25** ECHO LOW BUTTON

Adjusts the microphone vocal low frequency EQ response.

#### **20** MUSIC (BAL) BALANCE BUTTON

Adjusts the music balance signal for left and right speakers.

#### **2** ECHO VOLUME BUTTON

Adjusts the echo volume level.

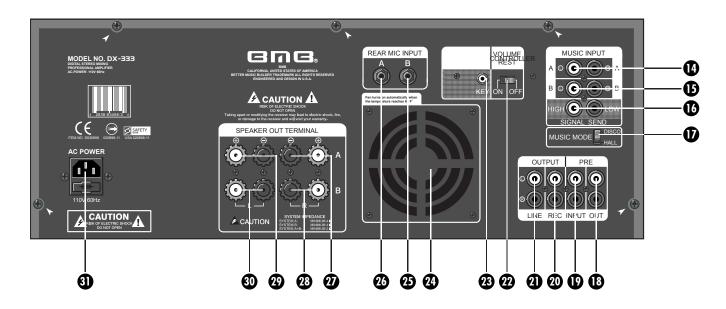
#### **23** MUSIC VOLUME BUTTON

Adjusts the music volume level.

#### **29** ECHO SELECTOR

Adjusts the echo stereo or mono.

# NAMES AND FUNCTIONS OF REAR PANEL COMPONENTS



- MUSIC INPUT
  - RCA connector audio source input.
- MUSIC INPUT E

  RCA connector audio source input.
- MICROPHONE SIGNAL SEND
  This is RCA connector out to PC or scoring function.
- MUSIC MODE

  Disco position for disco use, and Hi-Fi position for Karaoke use.
- **B** RCA CONNECTOR SIGNAL OUT (PRE OUT)
- **19** RCA CONNECTOR SIGNAL INPUT (PRE INPUT)
- **10** RCA CONNECTOR SIGNAL OUT FOR RECORD
- **1** RCA CONNECTOR OUT TO BRIDGE AMPLIFIER
- **VOLUME RESET**Automatic volume adjustment to zero level.

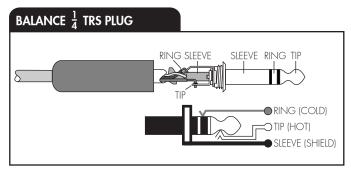
- **3** KEY CONTROLLER
- **3** SMART FAN

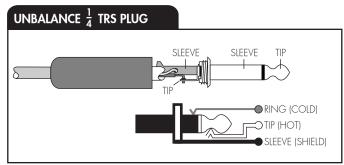
It automatically turns on when the temperature reaches 60 degrees Fahrenheit. Therefore, if the fan is not on, it does not mean that it is not working. It has a built-in sensor to measure the temperature.

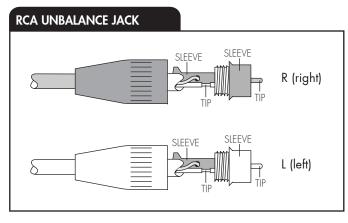
- **3** MICROPHONE INPUT **II** (Connecting to MIC. 2)
- **3** MICROPHONE INPUT (Connecting to MIC. 1)
- **②** SPEAKER ♠ (RIGHT SIDE OUT)
- **28** SPEAKER **□** (RIGHT SIDE OUT)
- **39** SPEAKER ♣ (LEFT SIDE OUT)
- **30** SPEAKER **B** (LEFT SIDE OUT)
- **3** AC-POWER PLUG

# **CONNECTOR INFORMATION**

# BALANCE XLR CONNECTORS XLR TRS Hot (+) Pin 2 Tip Cold (-) Pin 3 Ring Shield (Ground) Pin 1 Shield SHIELD COLD 3 1 FEMALE TRS Hot (+) Pin 2 Tip Cold (-) Pin 3 Ring SHIELD SHIELD COLD 3 1 FEMALE COLD 3 2 HOT

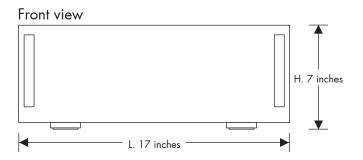


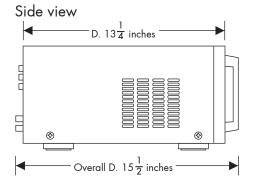


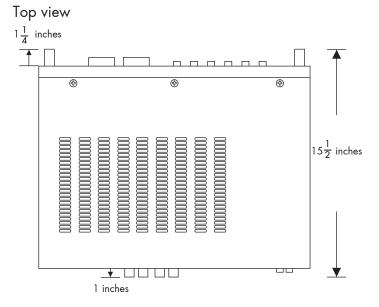


# **PHYSICAL**

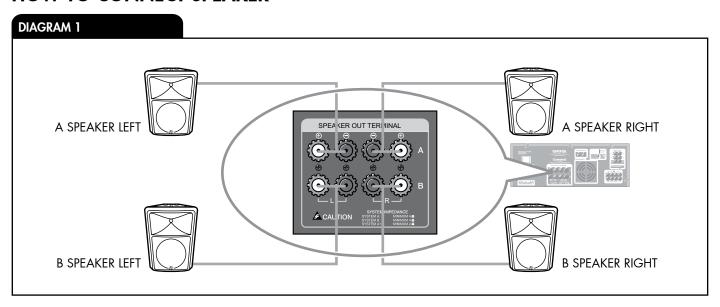
Height	$6\frac{3}{4}$ inches
Width	17 inches
Depth	13 ½ inches
Overall Depth	$15\frac{1}{2}$ inches
Net Weight	33 LBs
Shipping Weight	37 LBs



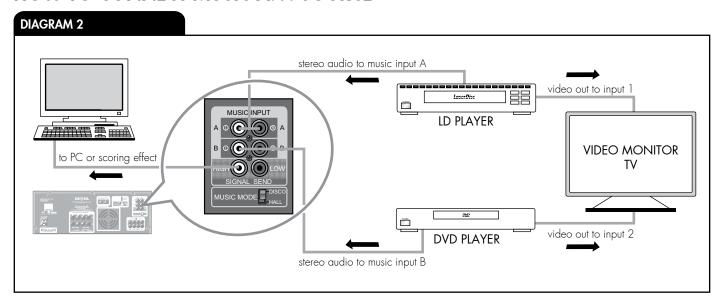




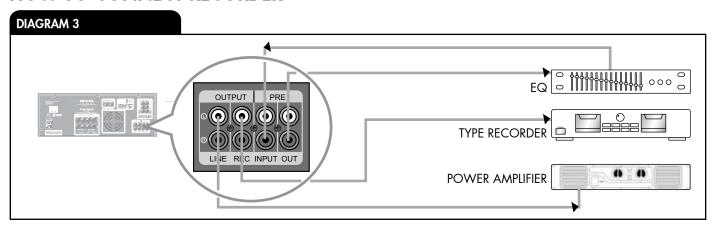
# **HOW TO CONNECT SPEAKER**



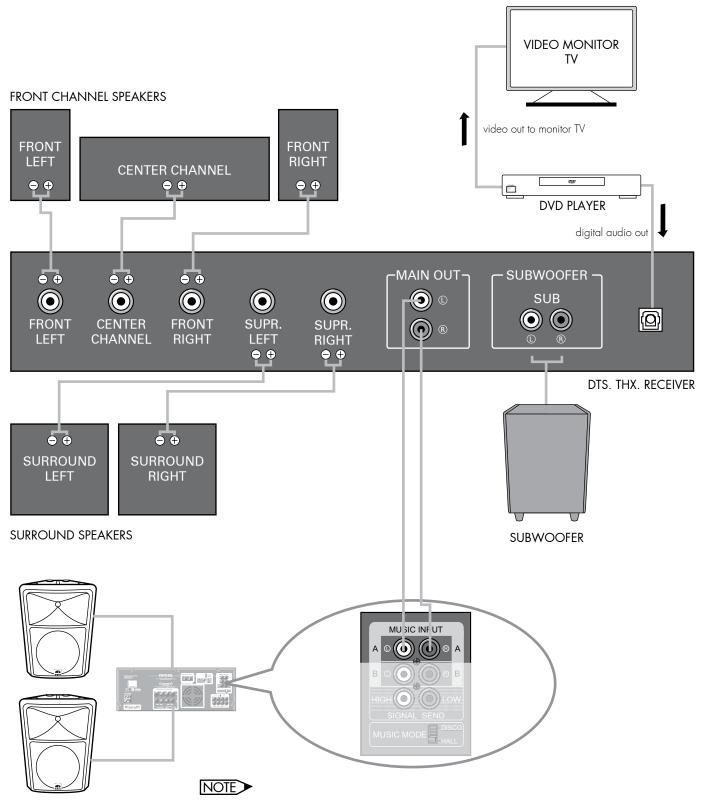
# **HOW TO CONNECT MUSIC A.V. SOURCE**



# **HOW TO CONNECT RECORDER**



# HOW TO CONNECT HOME THEATER AND KARAOKE



- 1. When you play the home theater, you must turn off power of karaoke amplifier.
- 2. When you play karaoke from your DVD player, you must turn down the A.V. (DTS, or THX) receiver's volume to zero.

# **HOW TO CONNECT MICROPHONE**

